

Abstract of the Disclosure

A self-supporting, pleated filter, and method of making the same. The method includes forming a plurality of pleats in a filter media that extend along a front face and a rear face. The pleats include a plurality of pleat tips and sloping side surfaces generally perpendicular to the direction of pleating. At least one planar reinforcing strip oriented in the direction of pleating is bonded to the pleat tips on the front face. At least one reinforcing member is positioned along the rear face of the filter media. The filter media is then cut to size. Frame members are applied for some applications. The reinforcing member may be a reinforcing strip oriented in the direction of pleating and bonded to the rear face of the filter media prior to the step of forming the plurality of pleats. A second planar reinforcing strip may optionally be bonded to the reinforcing strip pleat tips. The reinforcing member, the first reinforcing strip and the second reinforcing strip can be aligned to form a truss structure.

Alternatively, reinforcing strips oriented perpendicular to the direction of pleating are bonded to the rear face of the filter media prior to the step of forming the pleats. In another embodiment, a reinforcing member is applied to the rear face of the filter media after the pleats have been formed. The reinforcing member is positioned along at least one of the sloping side surfaces of the pleats on the rear face in a direction perpendicular to the direction of pleating. In another embodiment, a scrim is positioned along the rear face of the filter media. The scrim can be bonded to the frame members, the filter media and/or a portion of the frame members extend over a perimeter of the scrim to secure it to the pleated filter.

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